



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/369,735	08/06/1999	IKUO MATSUI	11059/002001	7188

20985 7590 06/18/2004

FISH & RICHARDSON, PC
12390 EL CAMINO REAL
SAN DIEGO, CA 92130-2081

EXAMINER

MONSHIPOURI, MARYAM

ART UNIT	PAPER NUMBER
----------	--------------

1652

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/369,735	MATSUI ET AL.	
	Examiner	Art Unit	
	Maryam Monshipouri	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-11, 14-27 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) 3-7, 25-27 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 8-11, 14-24, 28, 30 and 31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Claims 1-2, 12-13, and 29 have been canceled. Claims 8-11, 14-23, 28, 30-31 and 33-34 are still at issue and are present for examination. Claims 3-7, 25-27, and 32 are withdrawn.

Applicants' arguments filed on 4/22/2004, have been fully considered and are deemed to be persuasive to overcome some of the rejections previously applied. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-11, 14-24, 28, 30-31 and 33-34 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Kawarabayasi et al. (cited previously) in view of current enzyme assay techniques according to previous office action. In traversal of this rejection applicant argues the following : (1) Kawarabayasi et al. do not teach or suggest any functional or structural characteristics of the β -glycosidase as recited in application specification and claims. Rather, according to applicant, Kawarabayasi discloses only the genome sequence of *Pyrococcus horikoshii*. He/she then continues by stating that the β -glycosidase enzyme is localized in a membrane fraction and solubilized with 2.5% Triton X-100 and the stability of the β -glycosidase depends on the

Art Unit: 1652

presence of said detergent. Applicant then concludes that if the genome sequence of *Pyrococcus horikoshii* and the ORF of the β -glycosidase were known, a person skilled in the art could not have easily isolated said enzyme as a matter of routine experimentation.

(2) The β -glycosidase as set forth in applicant's claims has a novel substrate specificity with K_{cat}/K_m values high enough for hydrolysis of β -glycosides with long chain at the reducing end. The β -glycosidase also exert its enzyme activity even at high temperatures and maintains the stability in organic solvents. According to applicant these novel characteristics of the β -glycosidase are neither taught or suggested nor are they obvious from Kawarabayasi's reference.

Finally, applicant request that for said arguments the rejection should be withdrawn.

These arguments aware fully considered but were found **unpersuasive**. In response to applicant's **first** argument the examiner would like to indicate that the functional and/or structural characteristics that applicant refers to in the claims are all inherent to the β -glycosidase of Kawarabayasi, therefore said reference does not need to spell out said characteristics in order to render this invention obvious. Further, the amino acid structure of all proteins including the beta-glycosidase of Kawarabayasi usually reveal whether they are membrane bounds proteins or not. For example, the presence of a transmembrane domain region in an enzyme deduced/predicted amino acid sequence is a good indicator of said enzyme being membrane bound etc.

Thus, the examiner maintains that by examining the amino acid sequence of Kawarabayasi one of skill in the art would readily know (guess) that said enzyme is membrane bound and, at first glance, would reach for one of the most common and most inexpensive detergents (namely Triton X-100) on his/her shelf in order to solubilize said enzyme. It may be true that at first glance one of ordinary skill in the art would not be aware of the activity dependency of said enzyme on Triton X-100 but due motivation to routinely use said detergent for solubilization of all proteins, including β -glycosidase of this invention, he/she would use said detergent in the instant case and would inherently and unavoidable obtain an active β -glycosidase due to the presence of Triton in solubilization buffer, rendering the invention obvious.

With respect to applicant's **second** argument, it should be noted that the kinetic constants (K_m , K_{cat} etc.) of β -glycosidase and its solubility in organic solvents (if unexpected at all) are not currently recited in any claims under consideration. Hence the arguments directed to "high values" of said constant and their "solubility in organic solvents" are irrelevant. With respect to enzyme solubility at high temperatures the examiner respectfully maintains that *Pyrococcus Horikoshii* is known to survive at temperatures as high as 90-100 °C, thus the fact that an enzyme from said source is stable at said high temperature cannot be considered as a novel or unexpected finding.

In conclusion, in view of the above response, in addition to arguments provided in the previous office action, the examiner does not find any convincing reason to withdrawn the rejection and claims 8-11, 14-24, 28, 30-31 and 33-34 continue to be rejected.

No claims are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maryam Monshipouri whose telephone number is (571) 272-0932. The examiner can normally be reached on 7:00 a.m to 4:30 p.m. except for alternate Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnanthapu Achutamurthy can be reached on (571) 272-0928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

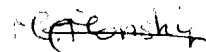
Application/Control Number: 09/369,735

Page 6

Art Unit: 1652

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Maryam Monshipouri Ph.D.

Primary Examiner
